Legal Counsel Approval

RL14-080

Introductory No. R14-42

Permanent No. R14-42

THE COUNCIL OF THE CITY OF BINGHAMTON
STATE OF NEW YORK

Date: June 18, 2014

Sponsored by Council Members: Berg, Matzo, Motsavage, Webb, Rennia, Mihalko, Papastrat

Introduced by Committee: Finance

RESOLUTION
entitled

A RESOLUTION AUTHORIZING A SUPPLEMENTAL AGREEMENT WITH GRIFFITHS ENGINEERING TO PROVIDE DESIGN AND CONSTRUCTION INSPECTION FOR EFFLUENT DISCHARGE IMPROVEMENTS AT THE BINGHAMTON-JOHNSON CITY JOINT SEWAGE TREATMENT PLANT (BJCJSTP)

WHEREAS, the City of Binghamton is a joint owner of the Binghamton-Johnson City Joint Sewage Treatment Plant (BJCJSTP) with the Village of Johnson City; and

WHEREAS, the Council of the City of Binghamton adopted Permanent Resolution 12-73 on October 3, 2012, entitled "A Resolution to enter into an Agreement with Griffiths Engineering for a Flood Mitigation System and the Binghamton-Johnson City Joint Sewage Treatment Plant"; and

WHEREAS, the City of Binghamton requires a supplemental agreement with Griffiths Engineers, LLC to provide design and construction inspection for effluent discharge improvements as the BJCJSTP at a cost not to exceed $77,000, as described in the attached proposal; and

WHEREAS, funds are available from budget line HX8150.500100.J11NN (Professional Services – Non-Flood).

NOW, THEREFORE, the Council of the City of Binghamton, duly convened in regular session, does hereby:

RESOLVE that the Mayor, or his designee, is hereby authorized to enter into a supplemental agreement, approved as to form and content by the Office of Corporation Counsel, with Griffiths Engineering, LLC for design and construction inspection for effluent discharge improvements at the Binghamton-Johnson City Joint Sewage Treatment Plant at a cost not to exceed $77,000 in accordance with the attached proposal; and be it further

RESOLVED that such funds shall be deducted from budget line HX8150.500100.J11NN (Professional Services – Non-Flood).

I HEREBY CERTIFY that the above described funds are unencumbered and available.

Chuck Shager, Comptroller

I hereby certify the above to be a true copy of the legislation adopted by the Council of the City of Binghamton at a meeting held on 6/18/14. Approved by the Mayor on 6/19/14.

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Sponsored by City Council Members:
Berg, Matzo, Motsavage, Webb, Rennia, Mihalko, Papastrat

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The within Resolution was adopted by the Council of the City of Binghamton.

June 18, 2014
Date

Deputy City Clerk Jerry Pelletier

June 19, 2014
Date Presented to Mayor

6/19/14
Date Approved

Mayor

	Ayes	Nays	Abstain	Absent
Motsavage	✓			
Mihalko	✓			
Rennia	✓			
Webb	✓			
Papastrat	✓			
Matzo	✓			
Berg				✓
Total	6	0	6	1

☐ Code of the City of Binghamton

☑ Adopted ☐ Defeated

6 Ayes 0 Nays 0 Abstain 1 Absent

GRIFFITHS
Washington Street, Suite 1
Binghamton, NY 13903

April 1, 2014

Mr. Philip T. Krey, PE
City Engineer
City of Binghamton
City Hall, 38 Hawley Street
Binghamton, NY 13901

Re: Binghamton-Johnson City Joint Sewage Treatment Plant Flood Mitigation Improvements
Effluent Discharge Improvements and other Additional Work.

Dear Mr. Krey:

Griffiths Engineering, LLC (GE) and its project team is under contract to design flood mitigation in accordance with FEMA requirements and to comply with the DEC Consent Order.

At the request of the Board and the City of Binghamton, GE as part of the project has reviewed the removal of sediment in both Fuller Hollow Creek and the Susquehanna River as potential areas of mitigation. However after a number of design iterations and modelling it has been determined that the floodwall construction results in a 0.00 ft increase in base flood elevations and therefore no mitigation is required for the construction of the floodwall. Therefore any sediment removal in the waterways will not be paid for by FEMA.

Through a number of project meetings GE has been made aware of the water quality issues related to the lack of effective effluent discharge mixing in the Susquehanna. At the request of the Board and City, GE and our sub-consultant Woidt Engineering Consultants, PC (Woidt) has investigated a number of design concepts to aid in addressing this problem. GE & Woidt have completed fieldwork, the testing of sediment, and tabulated a discussion of alternatives with a decision making matrix to aid the City and Board in the alternative selection. In addition, through Griffiths Engineering, Woidt has provided support to a recent Water Quality Improvement Program grant to cover a portion of the costs associated with the effluent mixing problem. In addition to these activities, addressing the effluent mixing problem will require a number of tasks and services that are outside the scope and design budget of the Flood Mitigation Project.

To move forward the selected alternative, GE/WE will need a two dimensional hydraulic model to understand the change in velocities under existing and proposed conditions. In addition to building the model, we need to collect topographic information and this will require a detailed topographic and hydrographic survey of the river. This work will also require GE to complete and support a joint permit application separate from the required permitting for the floodwall; and provide a separate design that is distinct from the scope of work under the FEMA contract.

The project team has been advised by Simmons Recovery Consulting to provide a clear divide between the FEMA funded Flood Mitigation Project and the efforts to improve effluent discharge into the Susquehanna.

ADDITIONAL WORK SCOPE OF SERVICES:

1. Topographic and Geomorphic Data Collection:

GE has worked with Woidt Engineering and Consulting, PC (Woidt) to procure a survey sub-consultant who will collect the topographic survey needed to complete a two dimensional hydraulic model (see details task 2). The project extents are approximately 1,300' upstream and downstream of the effluent pipe discharge location. The survey will require a resolution accurate enough to produce a 1'-2' contour map within the wetted width of the Susquehanna River. In addition to the bathymetric survey, the islands within the survey limits will need to be surveyed. Available LiDAR data will be to supplement areas along river banks and adjacent flood plain areas as needed.

GE/Woidt will conduct a site visit to qualitatively measure the bed load size of the Susquehanna River near the proposed locations of the structures and to observe the hydraulic roughness of the islands. Characterization of the river bank materials and the observation of construction access and constraints will also be completed.

2. Hydraulic Modeling and Geomorphic Assessment

GE/Woidt will develop a two-dimensional hydraulic model to complete the following tasks:

- Model Existing and Proposed 1, 100 and 500-year Water Surface Elevations
- Design the location and details of Flow Deflection Structures
- Develop hydraulic constituents for scour and structural analysis
- Develop existing and proposed basal shear stress for moving Fuller Hollow Creek bed load.

The two dimensional hydraulic model will be used to model in-stream flow conditions under proposed and existing conditions to ensure the main flow of the river is being re-directed to the south bank. The two dimensional hydraulic model will identify the direction and intensity of the change of velocity vectors due to the proposed construction activities. A two dimensional model is required since water momentum will be influenced longitudinally and laterally because of the flow deflection structures. A thorough understanding of the change in velocity vectors is crucial for project success to ensure the main flow will return to the south bank and that the majority of the future bed load deposits from Fuller Hollow Creek with be "flushed" downstream.

GE/Woidt will model existing and proposed 2-D hydraulic conditions for the 1-year, 100-year and 500-year return interval flood events. The 100-year and 500-year flood event discharges will be obtained from FEMA's preliminary flood insurance study (FIS) for the project area. The 1-year discharge will be developed by using the FIS hydrologic methods for a gaged stream. Woidt will use USGS Stream Gage at Vestal (01513500) for this analysis.

GE/Woidt will build an existing topographic mesh using the collected topographic survey data. A roughness mesh will be created using published and observed values for the channel. Two modeling runs will be completed for the three design discharges. The topographic mesh will be amended for the proposed conditions by removing the gravel bar and including the deflection structures as part of the mesh. Design hydraulic constituents will be obtained and the change in the base flood elevation (BFE) will be evaluated. If the design goals are not being met or if an unacceptable change in the BFE occurs, the location and details of the deflection structures will be changed. The two dimensional software will be FEMA approved.

GE/Woidt will also complete a geomorphic assessment of the project area to support the project goal of reducing the future rate of the gravel bar growth. Woidt will utilize the existing gravel bar data to characterize the size of the material in the Fuller Hollow Creek gravel bar to understand the desired velocity and basal shear stress to transport the majority of this sediment downstream during a 1-year return interval flood event. The 1-year return interval flood event occurs frequently (approximately once a year) and should be able to "flush" the gravel bar sediments downstream regularly enough to achieve the desired reduction in gravel bar growth. The target velocities and basal shear stress constituents will be obtained from the two dimensional model. The Wilcox and Crowe 2003 sediment transport equation will be used to calculate the incipient motion (when sediments begin to move) for the gravel bar.

Deliverables:

- A brief summary of the hydraulic modeling methodology and summary of findings will be added to the Design Report including figures.
- A brief summary of the geomorphic methodology and summary of findings will be added to the Design Report
- All data in electronic format

3. Design Development and Permitting

The design process will be iterative. The project area is in a sensitive location because of flooding concerns so an iterative design process is needed to ensure project support among permit reviewers. The preliminary step is furthering the Conceptual Design from Alternative 4 to a Preliminary Permitting Level Design Package. The Preliminary Permitting Level Design Package will include an opinion of probable construction cost, proposed construction approach, material quantities and qualities. The Package will be utilized for collecting input/comments from the local flood ordinance officer, the NYSDEC and the US Army Corps of Engineers (USACOE). Woidt will provide technical support to the City of Binghamton and the Board in answering stakeholder questions concerning the preliminary design. Woidt will incorporate the applicable feedback from the stakeholders into the design and move the design to the second stage.

The second design iteration is the Permit Level Design Package which will be used to obtain NYSDEC, USACOE, and local flood permits. The Permit Level Design Package will include a title sheet, design plans, detail sheets, erosion and sediment control measures and details and a project summary letter. This submission will also include a draft design report and an updated opinion of probable construction cost. The project is within a FEMA regulated floodway and will require a local floodplain permit application from the Town of Vestal and Village of Johnson City Code Enforcement Officers to ensure compliance with local flood ordinances. Since the project site is located on an 'AA' section of the Susquehanna River, it is protected by the NYSDEC and a Protection of Water permit will be also be required. The project will also need permits from the USACOE since it is located in a navigable body of water.

The Final Design Package will include all plans, specifications and contractual documents required for an open bid process. Woidt will provide sealed plans and specifications to GE. Woidt will also update the construction cost estimate and develop bid payment items for the bid contract.

Deliverables:

- Preliminary Permit Design Package
- Permit Design Package for NYSDEC, USACOE Permits and Local Flood Ordinances
- Summary of design narrative for Design Report
- Draft and Final Design Report
- Final Design Package

4. Construction Support Services

GE/Woidt will lead a mandatory, on site, pre-bid conference for all potential construction bidders. Woidt will assist GE in developing the bid package and reviewing the bids. Due to the dynamic nature of in-river construction and the geotechnical and topographic unknowns, GE/Woidt will provide part-time construction observation services to ensure successful completion of the Final Design Package. This will occur during the construction of critical project elements to ensure design plans are being constructed correctly. Construction supervision will include flagging the location of the structures and access to the construction locations plus ten (10) additional supervision days.

PROPOSAL ASSUMPTIONS

1. It is assumed that two (2) meeting with project stakeholders (USACOE and local flood ordinance officer) will be required. Griffiths will coordinate the meeting location, time and participants.

2. Initial calculations from previous surveys indicates up to 25,000 cy of sediment will be removed from the project.

3. It is assumed that the Permit Design Plan Set review comments will be relatively minor in nature and can be addressed via written correspondence.

4. The City of Binghamton will be the filer and holder of all permits necessary for construction.

5. It is assumed that GE/Woidt will provide part-time construction observation services for a total of ten (10) days.

6. GE/Woidt will attend an on-site, pre-bid conference and a pre-construction meeting.

7. This proposal does not include any other environmental analysis or preparation of permits other than pertaining to stream channel work.

8. The proposed conditions during a 1.0-year return interval flood will generate the hydraulic constituents required to move at least 50% of the existing surficial gravel bar materials without causing undesirable conditions to the base flood elevations.

9. It is assumed that this project will be bid as part of the Flood Wall Project and contractors will prepare a separate price for stream work as an alternate bid item or unit price item.

10. Griffiths Engineering cannot guarantee approval of any application for this or any project. No such guarantee implied or otherwise will be construed from this proposal.

11. All application, testing and permit fees to the various agencies are not included in our fees.

12. The Owner will provide us with any available studies, title reports or plans relevant to this site, which are known to exist by the Owner.

13. This proposal is based upon the effort of work to complete the project and the preliminary cost estimate from the water quality grant project application. It is assumed the material removed from the river will require disposal on municipally owned property which will be identified by the City of Binghamton. It is assumed that based on preliminary testing and NYSDEC direction, disposal to a specialized landfill is not required.

14. manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

15. Griffiths Engineering shall neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with work performed by the Owner, its General Contractor or any Subcontractors.

16. To the fullest extent permitted by law, and in consideration of the higher risks associated with this project, Griffiths Engineering's total liability to client for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to the project, or this proposal for any cause or causes, including but not limited to Griffiths Engineering's consultants, negligence, errors omissions, breach of contract or breach of warranty shall not exceed the total compensation paid by the client to Griffiths Engineering.

17. These "Conditions of Proposal" are hereby made part of this Agreement

ESTIMATED ENGINEERING COSTS

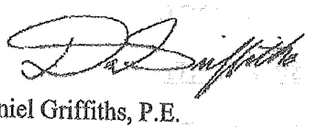
1.	Topographic and Geomorphic Data Collection:	$ 18,878 NTE
2.	Hydraulic Modeling and Geomorphic Assessment:	$ 17,738 NTE
3.	Design Development and Permitting:	$ 27,650 NTE
4.	Construction Support Services	$ 12,137 NTE
	Total:	$ 76,403 NTE

The above fees include all sub consultant activity. The project will be billed based upon actual work performed and billed to the project in accordance with Griffiths Engineering's Hourly Rate Schedule. Mileage and expenses are included in the not to exceed fees and will be billed in accordance with the Rate Schedule.

Griffiths Engineering will not exceed this estimate without written approval from the City of Binghamton.

We thank you for this opportunity of providing professional services in connection with this project. Should you have any questions concerning our proposal or our intended course of action, please don't hesitate to contact me.

Very truly yours,



Daniel Griffiths, P.E.

Form of Agreement

"If you are in agreement with the aforementioned scope and fee, please sign this proposal and return one copy to our office as an indication of your acceptance of this proposal and authorization to Griffiths Engineering to proceed with this project at the stated fee. All terms and conditions of this proposal are per "Standard Form of Agreement Between Owner and Engineer for Professional Services "" EJCDC E500 (latest edition) (Prepared by Engineers Joint Contract Documents Committee, issued and published by American Consulting Engineers Council, National Society of Professional Engineers, and American Society of Civil Engineers)."

Please acknowledge acceptance of this proposal by signing one (1) copy and returning it to our office.

ACCEPTED AND AUTHORIZED BY: DATE:

Authorized Signature

Printed Name

Title